

# WESTON REGION 5 START EMERGENCY RESPONSE SITE HEALTH AND SAFETY PLAN

*This Health & Safety Plan is strictly for Emergency Response (non-CBRN ERs), if site activities turn into a longer Site Investigation/ Assessment or Removal, WESTON's standard Health & Safety Plan needs to be generated and approved. This Health & Safety Plan is valid for 72 hours unless site conditions change. Contact the START Safety Officer to update or revise the plan.*

## 1. SITE INFORMATION

Prepared by: Lorie Hong	TDD: S-05-0001-1108-032	WO: 20405.012.001.1585.00	Date Prepared: 8/26/11
ER Initial Call (Date/ Time): 8/26/11 10:15	ER Date: 8/26/11	OSC R1 (Name/ Number): Jeff Lippert/734-692-7682	OSC R2 (Name/ Number):
Site Name and Contact: Fleetwood Heating and Cooling (based on NRC report)		START R1 (Name/ Number): Rick Mehl/847-254-6981	START R2 (Name/ Number): Mike Mejac/847-918-4002
Site Address: 101 Cemetary Street, Bangor, MI		START PM (Name/ Number): Lorie Hong/248-798-4089	START FSO (Name/ Number): Rick Mehl/847-254-6981
Site History: A 10,000 Sq. Foot building that was used to store air conditioning units, auction items, all terrain vehicles, chemicals and paints. Was formerly a plating shop.		Current Site Information: Facility caught on fire on the morning of 8/26/11. Fire Department is on-scene. MDEQ and EPA are on route.	
Scope of Work: US EPA requested START assistance in providing air monitoring with instruments such as multiRAE's, areaRAE's, toxiRAE's, and pDR's. Provide written and photographic documentation and technical support. Sampling could be requested (air, water, or soil).			

## 2. REVIEW AND APPROVAL

	Name	Signature	Date
Reviewed and Approved by: SO/DSM/CHS	Tonya Balla	<i>[Signature]</i>	8/26/11
Reviewed by: FSO/ Site Manager	Rick Mehl	<i>[Signature]</i>	8/26/11
Post Response Review by:			
Post Response Approval by:			



### 3. RESPONSE TASKS/ DURATION

Tasks	Duration (Hours/Days)	Tasks	Duration (Hours/Days)
<input checked="" type="checkbox"/> Perimeter Recon	2 Days	<input checked="" type="checkbox"/> Site Entry	2 Days
<input checked="" type="checkbox"/> Documentation	2 Days	<input checked="" type="checkbox"/> Air Monitoring	2 Days
<input type="checkbox"/> Multi-Media Sampling		<input checked="" type="checkbox"/> Decontamination	2 Days
<input type="checkbox"/> Hazcatting		<input type="checkbox"/> Data Management	

### 4. PHYSICAL HAZARDS TO PERSONNEL

- ☒ *Buddy System* – The buddy or line of sight system is mandatory for all site personnel.
- ☒ *Heat Stress* – The FSO shall generally be guided by the Weston OP in determining work/rest periods. Fluids shall be available at all times and encouraged during rest periods.
- ☒ *Cold Stress* – The FSO shall generally be guided by the Weston OP in determining work/rest periods. Workers shall be provided with adequate warm clothing, rest opportunities and exposure protection. Warm and/or sweet fluids shall also be provided during rest periods.
- ☒ *Precipitation* – Personnel should be aware of the increased risk of slips and falls on wet surfaces as well as exposure effects caused by wet clothing. Personnel should dress appropriately.
- ☒ *Lighting* – Fixed or portable lighting shall be maintained for dark areas or work after sunset to ensure that sufficient illumination is provided.
- ☐ *Work Near Water* – All personnel working in boats, on docks or within 10 feet of water deeper than 3 feet shall wear approved personal flotation devices (PFDs) or work vests and wading boots as appropriate.
- ☐ *High Noise Levels* – Hearing protection shall be used in high noise areas (exceeding 85 dBA – generally where noise levels require personnel to raise their voices to be heard) as designated by the FSO.
- ☐ *Electrical Hazards* – Electrical hazards should be identified on the site work zone map and marked out as appropriate. All electrical equipment should be used with a ground fault circuit interrupter (GFCI).
- ☒ *Trip Hazards* – Open manholes, pits, trenches or similar hazards should be noted on the site map and should be marked off on site as appropriate.
- ☒ *Carbon Monoxide* – Equipment operators shall ensure that personnel do not linger or work near exhaust pipes.
- ☒ *UV Light Exposure* – Personnel should dress so as to cover as much exposed skin as possible. Personnel should use a sunscreen with a protection factor (PF) of 15 or greater and should wear tinted safety glasses.
- ☐ *Helicopter/Airplane Operations* – Pilots shall provide safety briefings for all passengers.

- ☒ **Motor Vehicles** – Drivers shall maintain a safe speed at all times and shall not be allowed to operate vehicles in a reckless manner. Seat belts will be worn. In backing situations where the rear of the vehicle cannot be clearly seen, one person shall act as a ground guide to assist the driver. In situations where ground clearance and soil conditions are not known, one person shall dismount and act as a guide. (Also See Next Page)
- ☒ **Terrain (Slips, Trips and Falls)** – All personnel will exercise due caution when walking through areas of uneven terrain and undergrowth to ensure proper footing.
- ☐ **Ionizing Radiation** – Any encounter with ionizing radiation requires Health Physics support. All START responders must wear personal dosimetry which should consist of a TLD and/or Self-Reading Dosimeter
- ☐ **Non-Ionizing Radiation** – To the extent possible personnel should maintain a minimum distance of 30 feet from devices emitting radio or microwaves.
- ☐ **Underground/Overhead Utilities** – All underground utilities must be marked out prior to conducting intrusive activities. At least 15 feet of distance must be maintained with overhead utilities.
- ☐ **Confined Spaces** – Confined spaces will not be normally entered by response personnel. If a confined space is to be entered, a specific confined space entry work permit will be developed for that operation.
- ☒ **Drum Handling** – Drums must be handled in accordance with 29 CFR 1910.120. Containers must be labeled and constructed in accordance with EPA (40 CFR 264-265, and 300), and DOT (49 CFR 171-178) regulations. Temporary holding/staging areas for drums and other containers shall be constructed to contain spillage, runoff or accidental release of materials. Manual lifting and handling of drums shall be kept to a minimum. To the extent possible, mechanical devices, drum slings or other mechanical assist devices designed for that purpose should be used.

SEE WESTON FIELD OPERATING PROCEDURES (OPs) FOR ADDITIONAL GUIDANCE

<b>Vehicle Use Assessment and Selection</b>
<p><i>Driving is one of the most hazardous and frequent activities for WESTON Employees. The most appropriate type vehicle(s) authorized for use on this project is/are:</i></p> <ol style="list-style-type: none"> <li>1. START Truck</li> <li>2. Personal Vehicle/Rental</li> </ol>
<p><i>The following Project Team Member's qualifications and experience in driving these types of vehicles was evaluated and found to be acceptable (indicate vehicle type(s) number next to employee name). Team Member's driving the START box truck need to have a road test and DOT physical clearance every 2 years.</i></p> <ol style="list-style-type: none"> <li>1. Rick Mehl - All</li> <li>2. Mike Mejac - All</li> <li>3.</li> <li>4.</li> </ol>
<p><i>The project site was evaluated and a Traffic Control Plan <input type="checkbox"/> is required <input checked="" type="checkbox"/> is not required.</i></p> <p><i>If required, the Traffic Control Plan can be found in Attachment A.</i></p>

## 5. BIOLOGICAL HAZARDS TO PERSONNEL

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- ☒ *Insect Stings* – Hornet, wasp or bee stings, mosquito. Personnel should avoid the nesting areas of these insects. Personnel who are allergic to these insects should carry bee sting kits. Personnel may find repellants containing DEET effective in keeping these insects away.
- ☒ *Poisonous Spiders* – Black widow or brown recluse. Wear gloves when working in areas where these spiders may be present. If bitten, seek medical attention immediately.
- ☒ *Ticks* – Personnel should wear Tyvek when working in wooded areas as a precaution. Barring this, personnel should wear light colored clothing and tuck pants into socks. Personnel should also wear a repellant containing DEET. Personnel should use the buddy system and perform a tick check after exiting wooded areas. Suspected bites should be reported immediately.
- ☒ *Animal Bites* – Personnel should use extreme caution when in contact with strange animals. If bitten, seek medical attention immediately.
- ☐ *Snake Bites* – Personnel should use extreme caution when working in areas known to be inhabited by snakes. Snake leggings or chaps should be worn as a precaution. If bitten, seek medical attention immediately.
- ☐ *Poisonous Plants* – Personnel should use caution when working in wooded areas. Tyvek suits may be worn as a precaution. All personnel should wear Ivy Block.

## 6. TRAINING REQUIREMENTS

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- X 40-Hour HAZWOPER Training.
- X 8-Hour Annual Refresher Training w/ Blood borne Pathogen Training.
- X CPR and First Aid Training.
- 1 Site Health and Safety Supervisor Training (minimum one person on-site).
- ☐ 24-Hour Course for limited, specific tasks with 8-hour supervised OJT.
- ☐ 24-Hour Course for Level "D" site with 8-hour supervised OJT.
- ☐ 10-Hour Construction Safety Training
- ☐ Confined Space Training
- ☐ Competent Person Fall Prevention and Protection Training
- ☐ Competent Person Trenching and Excavation Training
- ☐ Dangerous Goods Shipping
- ☐ Site-Specific Training, Specify: \_\_\_\_\_
- ☐ Pre-entry training for emergency response skilled support personnel.
- ☐ Other: START Training \_\_\_\_\_

## 7. MEDICAL SURVEILLANCE REQUIREMENTS

- X Baseline physical examination with physician certification.
- X Annual physical examination with physician certification.
- X Two-Year DOT physical examination with physician certification (DOT card).
- X Annual Fit Test
- ☐ Site-specific medical monitoring protocol, Specify: \_\_\_\_\_
- ☐ Asbestos worker protocol.
- ☐ Exempt from Medical Surveillance, Specify Reason: \_\_\_\_\_
- ☐ Examination required in the event of chemical trauma or exposure.

## 8. CHEMICAL HAZARDS TO PERSONNEL

The following chemicals are known or suspected to be at this site:

Chemical Contaminates of Concern		Hazardous Material brought on-site by Contractors	
Chemical Name	Concentration	Chemical Name	Quantity
Metals	Unknown	<input type="checkbox"/> Alconox	1 quart
Nitric Acid	Unknown	<input type="checkbox"/> Fuel (gasoline)	5 gallons
Cyanide	Unknown	<input checked="" type="checkbox"/> MultiRae (Combo Cal. Gas)	(34 Liters)
Corrosives	Unknown	<input checked="" type="checkbox"/> Hydrogen Sulfide	25 ppm
Flammables	Unknown	<input checked="" type="checkbox"/> Methane	50% LEL
		<input checked="" type="checkbox"/> Carbon Monoxide	50 ppm
Chromium	Unknown	<input checked="" type="checkbox"/> Isobutylene (Cal. Gas)	100 ppm (17 liters)
		<input checked="" type="checkbox"/> Hydrogen Cyanide (Cal. Gas)	10 ppm, (58 liters)
		<input type="checkbox"/> Methane (Cal. Gas)	100 ppm (17 liters)
		<input type="checkbox"/> Hydrogen (for FID)	2 kg

### Web Links

1. NIOSH Pocket Guide (Electronic Version) - <http://www.cdc.gov/niosh/npg/npgmaina.html>
2. Vermont SIRI MSDS Collection - <http://hazard.com/msds/>
3. J.T. Baker/Mallinkrodt MSDS Collection - <http://www.mallinkrodt.com>
4. NIOSH Chemical Safety Cards - <http://www.cdc.gov/niosh/publications/niosh2000.html>
5. North American Emergency Response Guide (Material Search) - <http://hazmat.dot.gov/pubs/erg/rgsintro.htm>
6. North American Emergency Response Guide (ID Number Search) - <http://hazmat.dot.gov/pubs/erg/undam.htm>
7. North American Emergency Response Guide (Isolation Distances) - <http://hazmat.dot.gov/pubs/erg/greenpgs.htm>

**Additional Links**

1. U.S. Environmental Protection Agency - <http://epa.gov>
2. U.S. Environmental Protection Agency OSC Home Page - <http://www.epa.gov>
3. OSHA - <http://www.osha.gov>
4. National Atmospheric Release Advisory Center (NARAC) - <http://narac.dht.gov>

Attach information obtained from any of the above references immediately after this page.

## 9. SITE SAFETY BRIEFINGS/MEETINGS

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- All personnel shall be provided with an initial and daily site safety briefing to communicate the nature, level and degree of hazards expected on site.
- All personnel will also receive briefings when significant changes in site conditions occur and the Health and Safety Plan will be revised accordingly.

## 10. EMERGENCY PROCEDURES

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- In all cases when an on-site emergency occurs, personnel shall not reenter the area or restart work until:
  - ✓ The condition resulting in the emergency has been investigated and has been corrected;
  - ✓ Hazards have been reassessed; and
  - ✓ Personnel have been briefed on any changes in either site operations or the site health and safety plan.
- Emergency Medical Procedures
  - ✓ Contact designated EMT; and
  - ✓ Do not attempt to move seriously injured personnel.
- Emergency Fire Procedures
  - ✓ Do not attempt to fight fires other than small fires in the early stages of development;
  - ✓ Do not take extraordinary measures to fight fires; and
  - ✓ Evacuate to a safe distance and call the fire department.
- Evacuation routes and assembly point(s) should be established locally, and all personnel should be informed of assembly point location during safety briefings.

## 11. COMMUNICATIONS

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- General signals during respirator usage:
  - THUMBS UP - I'm OK/I Agree
  - THUMBS DOWN - I Don't Agree
  - HANDS ACROSS THROAT - Out of Air/Trouble Breathing
  - GRAB HAND/ARM - Come with Me
  - HANDS ON HEAD - I Need Assistance
- Radio Communications
  - Working - Channel 1
  - Emergency - Channel 2
- Mobile Telephone(s) (*See page 1 and 7*)

### Web Links

1. Hospital Locator - <http://www.hospitaldirectory.com>
2. White Pages - <http://whitepages.com>
3. Yellow Pages - <http://yellowpages.com>
4. Yahoo Maps- <http://maps.yahoo.com>
5. Google Maps- <http://google.com/maps>

Emergency Contact	Location	Telephone Number	Notified
Hospital (Primary)	Bronson Lakeview Hospital 408 Hazen St, Paw Paw, MI	269-657-1500	Yes
Hospital (Secondary)			No
Ambulance		911	No
Police		911	No
Fire Department		911	No

Does primary hospital have chemical trauma capability? Yes

If no, then where is the closest backup? Enter Back-up Hospital Name Here      Enter Telephone Number Here

## ADDITIONAL EMERGENCY TELEPHONE CONTACTS

Contact	Telephone/Pager Number	Contact	Telephone/Pager Number
R1 OSC Cell Phone	Jeff Lippert/7340692-7682	R2 OSC Cell Phone	
START R1 Cell Phone	Rick Mehl/847-254-6981	START R2 Cell Phone	Mike Mejac/847-918-4002
START FSO Cell Phone	Rick Mehl/847-254-6981	START Project Manager	Lorie Hong/248-798-4089
START Program Manager- Pamela Bayles	(847) 918-4030 (O), (847) 826-8158 (C)	START Alternate Program Manager- Dan Capone	(517) 381-5920 (O), (313) 218-2659 (C)
START Manager- Rick Mehl	(312) 424-3312 (O), (847) 254-6981 (C)	START Manager- Frank Beodray	(440) 239-1978 x104 (O), (440) 336-6360 (C)
START SO- Tonya Balla	(847) 918-4094 (O), (847) 528-2623 (C)	Weston DSM- Ted Deecke	(847) 337-4147 (C)
Weston Med. Consultant- Workcare - Dr. Peter Greaney	call 800-455-6155	Work Care 24-hour Physician	Afterhours (800) 455-6155 push 3
CHEMTREC (Emergency)	(800) 424-9300	CHEMTREC (Non-Emergency)	(800) 262-8200
ATSDR- Dr. Mark Johnson	(312) 353-3436 (O), (312) 307-7415 (C)	EPA Regional Response Center	(312) 353-2318
National Response Center	(800) 424-8802	Utility Markout Services	
National Poison Control	(800) 942-5969	Weston Warehouse- Ralph Milewski	(847) 265-5089 (O), (847) 417-7273 (C)

### 12. DECONTAMINATION PROCEDURES

- ☐ Wet Decontamination      Decontamination Method (s):
- ☒ Dry Decontamination      Decontamination Method(s): Dispose of contaminated PPE with IDW on site. Decon equipment with Alconox solution.
- ☐ All investigative derived waste (IDW) generated will be placed in appropriate containers, labeled and stored on site for eventual disposal.
- ☐ Refer to Attachment A for additional Decontamination Procedures.

Description of site specific decontamination plan: \_\_\_\_\_

Adequacy of Decontamination determined by: Click Here for Options

### 13. PHYSICAL DESCRIPTION OF SITE

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*Enter the following information if known or complete when known:*

1. Size of site: \_\_\_\_\_ acres/ square feet
2. Distance to nearest residence: \_\_\_\_\_ feet/ miles
3. Nearest waterway: \_\_\_\_\_ Name \_\_\_\_\_ feet/ miles
4. Nearest school: \_\_\_\_\_ Name \_\_\_\_\_ feet/ miles
5. Nearest hospital: \_\_\_\_\_ Name \_\_\_\_\_ feet/ miles
6. Nearest public building: \_\_\_\_\_ Name \_\_\_\_\_ feet/ miles

#### Web Links

1. MSA Response Respirator Selector - <http://msanet.com/response/chemicalsearch.asp>
2. MSA Cartridge Life Expectancy Calculator - <http://webapps.msanet.com/carlife/>
3. Scott Respirator Selection - <http://www.scotthealthsafety.com/airpur.htm>
4. Kappler Suit Smart PPE Selector - [http://www.kappler.com/techdata\\_main.html](http://www.kappler.com/techdata_main.html)
5. SKC air sampling (for the proper sampling methods and the mediums) - <http://www.SKCinc.com>
6. Wireless Information System for Emergency Responders (WISER) -  
<http://webwiser.nlm.nih.gov/getHomeData.do>
7. DuPont™ SafeSPECTM - <http://www2.dupont.com/NOWApp/DPPRequestGateway/>

## 14. SITE AIR MONITORING PROGRAM

Action Levels				
These Action Levels, if not defined by regulation, are some percent (usually 50%) of the applicable PEL/TLV/REL. That number must also be adjusted to account for instrument response factors.				
	Tasks	Action Level		Action
<input checked="" type="checkbox"/> Explosive atmosphere	All	Ambient Air Concentration	Confined Space Concentration	
		<10% LEL	0 to 1% LEL	Work may continue. Consider toxicity potential.
		10 to 25% LEL	1 to 10% LEL	Work may continue. Increase monitoring frequency.
		>25% LEL	>10% LEL	Work must stop. Ventilate area before returning.
<input checked="" type="checkbox"/> Oxygen	All	Ambient Air Concentration	Confined Space Concentration	
		<19.5% O <sub>2</sub>	<19.5% O <sub>2</sub>	Leave area. Re-enter only with self-contained breathing apparatus.
		19.5% to 25% O <sub>2</sub>	19.5% to 23.5% O <sub>2</sub>	Work may continue. Investigate changes from 21%.
		>25% O <sub>2</sub>	>23.5% O <sub>2</sub>	Work must stop. Ventilate area before returning.
<input checked="" type="checkbox"/> Radiation	Initial Recon	< 3 times background 3 times background to < 1 mR/hour  > 1 mrem/hour		Continue work. Radiation above background levels (normally 0.01-0.02 mR/hr) signifies possible radiation source(s) present. Continue investigation with caution. Perform thorough monitoring. Consult with a Health Physicist. Potential radiation hazard. Evacuate site. Continue investigation only upon the advice of Health Physicist.
<input checked="" type="checkbox"/> Organic gases and vapors	All	0.5 ppm		If PID indicates 0.5 ppm, upgrade to level C PPE with GME P100 cartridges.
<input checked="" type="checkbox"/> Inorganic gases, vapors, and particulates	All	25 mg/m <sup>3</sup> indicated on DataRAM		

15. PERSONAL PROTECTIVE EQUIPMENT

Task # 1

Perimeter Recon

Level of Protection	Type of Suit/Coverall	Inner Glove	Outer Glove(s)	Boot Cover	Type of APR Cartridge	Cartridge Service Life (minutes)
Level "D"	None Required	None Required	None Required	None Required	None Required	

Task # 2

Site Recon/Documentation

Level of Protection	Type of Suit/Coverall	Inner Glove	Outer Glove(s)	Boot Cover	Type of APR Cartridge	Cartridge Service Life (minutes)
Level "D+"	None Required	None Required	None Required	Latex Booties	None Required	

Task # 3

Air Monitoring

Level of Protection	Type of Suit/Coverall	Inner Glove	Outer Glove(s)	Boot Cover	Type of APR Cartridge	Cartridge Service Life (minutes)
Level "D+"	None Required	None Required	None Required	Latex Booties	None Required	

Task # 4

Air Monitoring/Sampling

Level of Protection	Type of Suit/Coverall	Inner Glove	Outer Glove(s)	Boot Cover	Type of APR Cartridge	Cartridge Service Life (minutes)
Level "C"	Coated Tyvek	Nitrile Surgical	Nitrile	Latex Booties	GME-P100	Indicated with use strip on cartridge or cartridge label or when there is breakthrough.

Task # 5

Click Here for Options

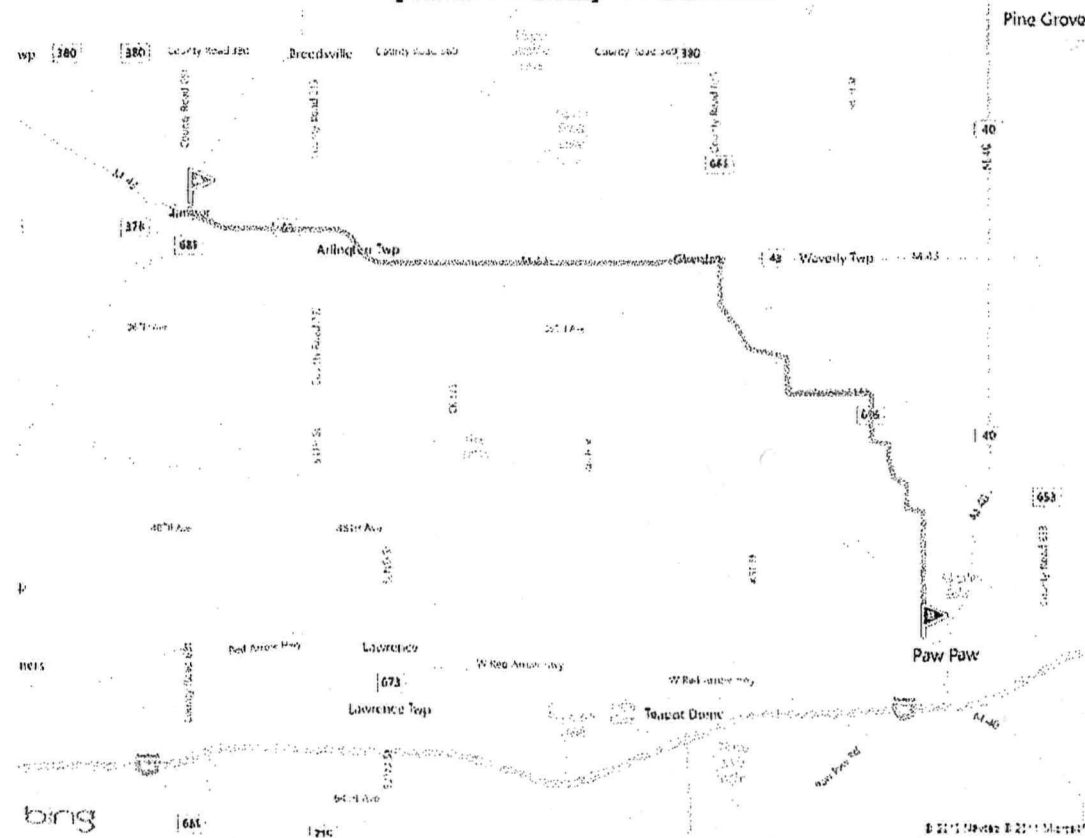
Level of Protection	Type of Suit/Coverall	Inner Glove	Outer Glove(s)	Boot Cover	Type of APR Cartridge	Cartridge Service Life (minutes)
Click Here	Click Here	Click Here	Click Here	Click Here	Click Here	
Click Here	Click Here	Click Here	Click Here	Click Here	Click Here	

### Site Map and Directions



1. Yahoo Maps- <http://maps.yahoo.com> ;
2. Google Maps- <http://google.com/maps> ; or
3. DeLorme Street Atlas (if not online)

## Hospital Location Map and Directions



1. Depart Cemetery Rd toward N Center St / CR-681 56 ft
2. Turn left onto N Center St / CR-681 0.2 mi
3. Turn left onto M-43 / E Monroe St 8.0 mi
4. Turn right onto County Road 665 / CR-665 (Marathon on the corner ) 8.0 mi
5. Arrive at 408 Hazen St, Paw Paw, MI on the left. The last intersection is W North St. If you reach W Willard St, you've gone too far

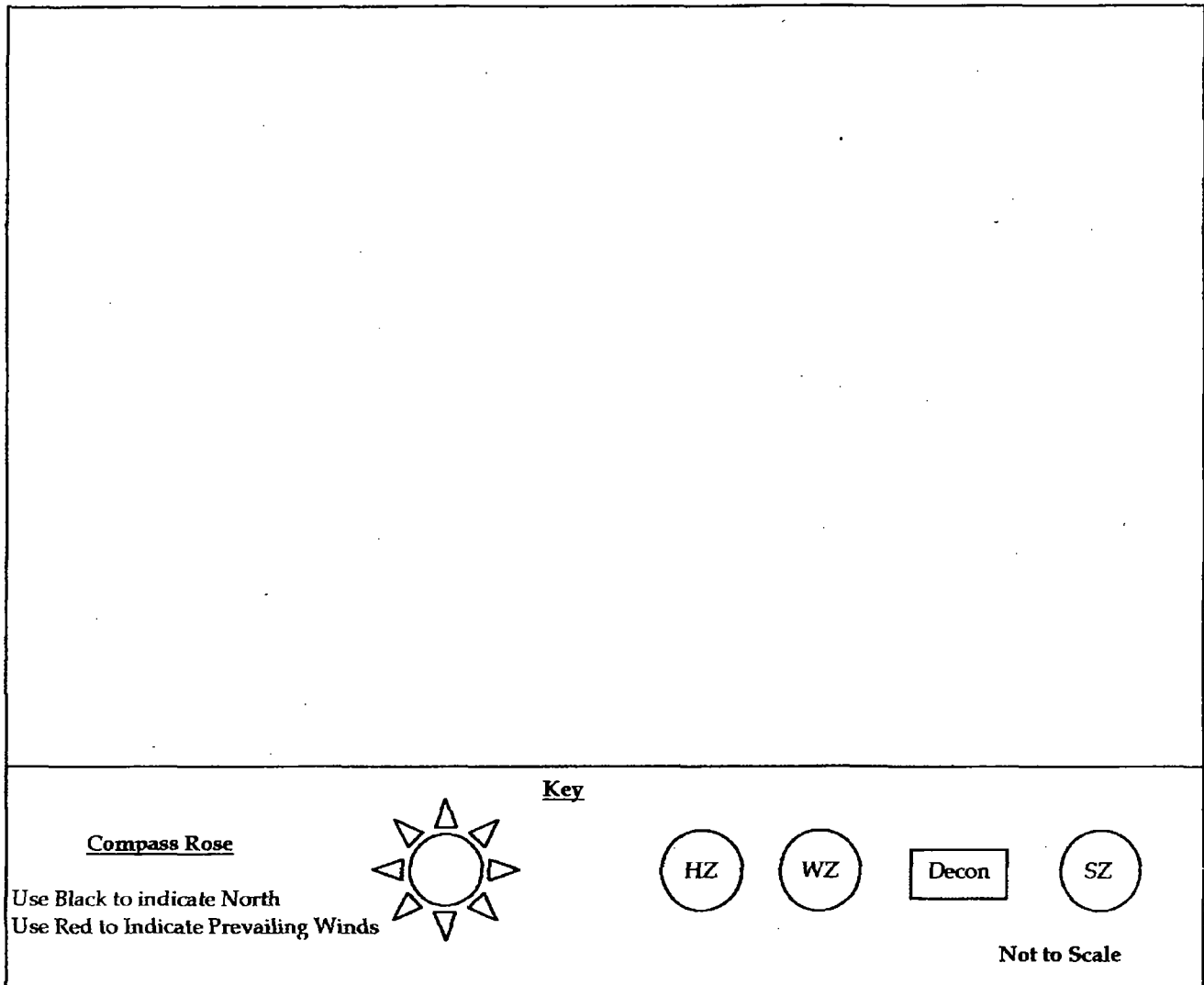
1. Yahoo Maps- <http://maps.yahoo.com> ;
2. Google Maps- <http://google.com/maps> ; or
3. DeLorme Street Atlas (if not online)

## 16. SITE CONTROL MEASURES

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1. No person should enter the site without subscribing to this or another appropriate Health and Safety Plan.
2. The buddy or line of sight system is mandatory for all site personnel.

### Site Map with Work Zones



**17. HAZARDOUS WASTE SITE AND ENVIRONMENTAL SAMPLING ACTIVITIES**

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Were Samples Obtained Off Site? Yes No      On Site? Yes No

Type(s) of Samples: Air SW GW Drum/Tank Soil Sediment Asbestos Wipe.

Other: \_\_\_\_\_

How obtained: Poly Scoop Drum Thief/Coliwas SS Trowel Split Spoon Auger Bailer Dredge

Bottle Immersion Pump Low-Flow Pump Other: \_\_\_\_\_

Was Lab notified of Potential Hazard Level of Samples? Yes No

## 18. AIR MONITORING SUMMARY LOG

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Collected by: \_\_\_\_\_

Please specify where air monitoring data will be documented: ☐ Field Notebook ☐ Field Data Sheets☐ Air Monitoring Log ☐ Trip Report ☐ Other

Station Location	Multi-RAE	Micro FID	Radiation Meter	DataRAM or PDR	Lumex MVA	Other	Other
Background Readings	____ % LEL ____ % O <sub>2</sub> ____ ppm CO ____ ppm H <sub>2</sub> S ____ ppm VOC	____ ppm	____ $\mu$ R/hr ____ mR/hr ____ CPM	____ $\mu$ g/m <sup>3</sup> or ____ mg/m <sup>3</sup>	____ ng/m <sup>3</sup>		
	____ % LEL ____ % O <sub>2</sub> ____ ppm CO ____ ppm H <sub>2</sub> S ____ ppm VOC	____ ppm	____ $\mu$ R/hr ____ mR/hr ____ CPM	____ $\mu$ g/m <sup>3</sup> or ____ mg/m <sup>3</sup>	____ ng/m <sup>3</sup>		
	____ % LEL ____ % O <sub>2</sub> ____ ppm CO ____ ppm H <sub>2</sub> S ____ ppm VOC	____ ppm	____ $\mu$ R/hr ____ mR/hr ____ CPM	____ $\mu$ g/m <sup>3</sup> or ____ mg/m <sup>3</sup>	____ ng/m <sup>3</sup>		
	____ % LEL ____ % O <sub>2</sub> ____ ppm CO ____ ppm H <sub>2</sub> S ____ ppm VOC	____ ppm	____ $\mu$ R/hr ____ mR/hr ____ CPM	____ $\mu$ g/m <sup>3</sup> or ____ mg/m <sup>3</sup>	____ ng/m <sup>3</sup>		
	____ % LEL ____ % O <sub>2</sub> ____ ppm CO ____ ppm H <sub>2</sub> S ____ ppm VOC	____ ppm	____ $\mu$ R/hr ____ mR/hr ____ CPM	____ $\mu$ g/m <sup>3</sup> or ____ mg/m <sup>3</sup>	____ ng/m <sup>3</sup>		
	____ % LEL ____ % O <sub>2</sub> ____ ppm CO ____ ppm H <sub>2</sub> S ____ ppm VOC	____ ppm	____ $\mu$ R/hr ____ mR/hr ____ CPM	____ $\mu$ g/m <sup>3</sup> or ____ mg/m <sup>3</sup>	____ ng/m <sup>3</sup>		



[illegible]

Comments/Follow Up
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**Attachment A**  
**DECONTAMINATION PLAN**  
(If applicable, include additional decontamination procedures,  
e.g. Section 5 from Weston Corporate HASP)

TMA Soft and Sour		MATERIAL SAFETY DATA SHEET		PAGE 1	
<b>SECTION 1 - PRODUCT SOURCE AND IDENTITY</b>					
Supplier identity and address		Product description:		Date: Apr. 3, 2006	
Technical Marketing Alliance 2335 Buttermilk Crossing Crescent Springs, KY 41017		Name: TMA Soft & Sour Purpose: Neutralizes caustic and softens fabrics. Proprietary Formula Code: TM10853			
Emergency phone: 800-424-9300		Product information:		859-727-7854	
<b>SECTION 2 - SHIPPING CLASSIFICATION</b>					
Proper Shipping Name, Hazard Class, UN/NA Number Packing Group, Emergency Response Guide Number					
Compounds, cleaning liquid, Class 8, NA 1760, PG III (Contains phosphoric acid) ERG 154					
Labels required per 49 CFR 172.101:		Corrosive			
Size for "Limited quantity" per 49 CFR 173.150-4:		1 gal max in 66# max.			
Reportable Quantity ("RQ") per 49 CFR 172.101:		None or not possible in one non-bulk package			
<b>SECTION 3 - SAFETY RATINGS AND HAZARDOUS INGREDIENT INFORMATION</b>					
Reporting required by Title III Sec 313, 40 CFR 372, 29 CFR 1910.1200		Exposure Limit Values			
CAS#	313	Material or Component	% RQ#	TWA	STEL
7664-38-2	Yes	Phosphoric Acid	< 20 5000	1 mg/m3	3 mg/m3
No component is listed in "THRESHOLD LIMIT VALUES AND BIOLOGICAL EXPOSURE INDICES FOR 2006" from ACGIH except as noted above. Components listed in TITLE III SEC 313 (EPCRA) are indicated by "Yes" above.					
Note: The purpose of this MSDS is to provide safe handling, shipping and disposal information for users of the product. It is not intended to, nor does it, provide complete or extensive toxicological data on the product or its components. Users who require this information are referred to primary suppliers of the ingredients of interest.					
Emergency overview: Acid solution. Keep off of skin and out of eyes. Keep lid on containers when not in use. Do not store in metal container.					
Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8,
Immediate	Yes	No	No	No	OSHA 29 CFR 1910.1200 and
Delayed	No	XXX	XXX	XXX	SARA 302/311/312/313.
HMIS Hazard ratings: Health 2 Fire 0 Instability 0 Other C (Glasses, gloves, apron)					
NFPA 704 Hazard Ratings: Health 2 Flammability 0 Reactivity 0 Special Cor					
Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4					
Note: HMIS and NFPA ratings are subjective evaluations of hazards and can differ between preparers. They are intended and useful only as a rapid approximation of the hazards rated.					
Threshold limit value: Not established on product.					
TOSCA Status: All ingredients listed			CERCLA RQ: See Sec 2.		
California Prop. 65: None			Ingredients on cancer lists: None		
Reproductive implications: None					
<b>SECTION 4 - PHYSICAL AND CHEMICAL PROPERTIES</b>					
Appearance:	Light green liquid		Flash point deg. F (cc):	None	
Odor:	Floral		Initial boiling point deg. C:	ND	
Specific gravity:	>1		Vapor pressure 20 deg C:	ND	
pH reaction:	Acid		Freezing point deg. C:	ND	
% phosphorous:	5.6		Solubility in water:	100%	
VOC Content:	None				
California Rule 102 (66): Contains no photo chemically active materials.					

SECTION 5 - SAFE HANDLING AND STORAGE			
General		Keep off of skin and out of eyes. Wipe up spills at once. Keep lid on containers when not in use. Do not store in metal container.	
Protective equipment			
Eyes	Safety glasses or goggles should be worn if there is possibility of eye contact.		
Skin	Impermeable gloves such as rubber, PVC or neoprene are recommended.		
Respiratory protection		None normally required. If risk of inhalation occurs, select and use equipment according to OSHA/NIOSH guidelines for nuisance mists.	
Ventilation	A well ventilated work environment is recommended.		
Other	None		
SECTION 6 - HEALTH SAFETY DATA			
Effects of acute or chronic over exposure			
Eyes	Irritating to eyes. No chronic effects known.		
Skin	Can cause irritation from repeated exposure.		
Inhalation	Mists may be irritating to breathing passages.		
Ingestion	Not a likely source of chronic exposure.		
SECTION 7 - PHYSICAL STABILITY AND REACTIVITY DATA			
Explosive limits		Flash point: See Sec 4	
Upper None	Lower None	Conditions to avoid: Do not store in metal containers.	
Chemical stability	Stable	Hazardous decomposition products: None known	
Hazardous polymerization	Cannot occur	Incompatibility: Will dissolve most metals.	
SECTION 8 - EMERGENCY RESPONSE PROCEDURES			
Fire	Extinguishing media	Use equipment appropriate to the main cause of the fire.	
	Special procedures	None	
	Unusual hazards	Acid fumes may be formed in a fire.	
First Aid	Eyes	Flush with water for at least 15 min. Seek medical attention. See Sec. 6.	
	Skin	Wash exposed skin with soap and water until gone. Remove affected clothes rinse off product and wash clothes before reuse.	
	Inhalation	If affected, remove individual to fresh air, get medical attention at once if there is any discomfort.	
	Ingestion	Dilute by giving large amounts of milk or water. Get medical attention immediately. Do not induce vomiting.	
Spills	Small / large spill	Small amounts may be flushed to drain. Comply with federal, state and local regulations on reporting spills. Keep out of waterways and storm sewers.	
Product as made has the characteristic of corrosivity, like " Unlisted Hazardous Waste D002", RQ 100#.			
Information presented herein has been compiled from sources considered to be accurate and reliable, but is not guaranteed to be so. Since conditions of use are beyond our control we make no warranties, expressed or implied. MSDS prepared by: R.N. Miller 1-800-342-3577			

**MATERIAL SAFETY DATA SHEET****SECTION 1 - PRODUCT SOURCE AND IDENTITY**

Supplier identity and address	Product description:	Date: Nov. 7, 2008
Technical Marketing Alliance 2335 Buttermilk Crossing Crescent Springs, KY 41017	Name: Liquid Laundry Rust Removing Sour Purpose: Rewetting rust removing sour Proprietary Formula Code: TM10854	
Emergency phone: 800-424-9300	Product information: 859-727-7854	

**SECTION 2 - SHIPPING CLASSIFICATION**

Proper Shipping Name, Hazard Class, UN/NA Number Packing Group, Emergency Response Guide Number		
Corrosive liquid, acidic, organic, n.o.s., 8, UN3265, PG III (Citric acid), ERG 153		
Labels required per 49 CFR 172.101:	Corrosive	
Size for "Limited quantity" per 49 CFR 173.150-4:	1 gal max in 66# max.	
Reportable Quantity ("RQ") per 49 CFR 172.101:	None or not possible in one non-bulk package	

**SECTION 3 - SAFETY RATINGS AND HAZARDOUS INGREDIENT INFORMATION**

Reporting required by Title III Sec 313, 40CFR 372.200, 1910.1200					Exposure Limit Values
CAS#	313	Material or Component	% RQ#	TWA	STEL
77-92-9	No	Citric acid, anhydrous	10-15 None	Not established	

Product also contains non regulated detergents which may contribute to eye and skin irritation.

No component is listed in "THRESHOLD LIMIT VALUES AND BIOLOGICAL EXPOSURE INDICES FOR 2008" from ACGIH except as noted above. Components listed in TITLE III SEC 313 (EPCRA) are indicated by "Yes" above.

Note: The purpose of this MSDS is to provide safe handling, shipping and disposal information for users of the product. It is not intended to, nor does it, provide complete or extensive toxicological data on the product or its components. Users who require this information are referred to primary suppliers of the ingredients of interest.

Emergency overview: Concentrated organic acid solution. Keep off of skin and out of eyes.

Do not breathe mists. Wash off of skin immediately to avoid severe burns.

Use standard industrial good practices. Do not store in metal container.

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8,
Immediate	Yes	No	No	No	OSHA 29 CFR 1910.1200 and
Delayed	No	XXX	XXX	XXX	SARA 302/311/312/313.

HMIS Hazard ratings: Health 2 Fire 0 Instability 0 Other B (Glasses, gloves)

NFPA 704 Hazard Ratings: Health 2 Flammability 0 Reactivity 0 Special Cor

Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4

Note: HMIS and NFPA ratings are subjective evaluations of hazards and can differ between preparers. They are intended and useful only as a rapid approximation of the hazards rated.

Threshold limit value: Not established on product.

TOSCA Status: All ingredients listed CERCLA RQ: See Sec 2.

California Prop. 65: None Ingredients on cancer lists: None

Reproductive implications: None

**SECTION 4 - PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Teal green liquid	Flash point deg. F (cc):	None
Odor:	Nil	Initial boiling point deg. C:	ND
Specific gravity:	1.1	Vapor pressure 20 deg C:	ND
pH reaction:	<4	Freezing point deg. C:	ND
% phosphorous:	None	Solubility in water:	100%
VOC Content:	None	ND = Not Determined	
California Rule 102 (66):	Contains no photo chemically active materials.		

SECTION 5 - SAFE HANDLING AND STORAGE			
General	Keep off of skin and out of eyes. Wipe off skin at once to avoid irritation. Do not store in metal container. Use standard industrial good practices.		
Protective equipment			
Eyes	Safety glasses or goggles should be worn if there is possibility of eye contact.		
Skin	Impermeable gloves such as rubber, PVC or neoprene are recommended.		
Respiratory protection	None normally required. If risk of inhalation occurs, select and use equipment according to OSHA/NIOSH guidelines for nuisance mists.		
Ventilation	A well ventilated work environment is recommended.		
Other	None		
SECTION 6 - HEALTH SAFETY DATA			
Effects of acute or chronic over exposure			
Eyes	Irritating to eyes. No chronic effects known.		
Skin	Can cause delayed pain and severe irritation or skin corrosion.		
Inhalation	Mists may be irritating to breathing passages.		
Ingestion	Not a likely source of chronic exposure.		
SECTION 7 - PHYSICAL STABILITY AND REACTIVITY DATA			
Explosive limits		Flash point: See Sec 4	
Upper: None	Lower: None	Conditions to avoid: Do not store in metal containers.	
Chemical stability	Stable	Hazardous decomposition products: None known.	
Hazardous polymerization	Cannot occur	Incompatibility: Will dissolve or corrode most common metals.	
Fire	Extinguishing media	Use equipment appropriate to the main cause of the fire.	
	Special procedures	None	
	Unusual hazards	Acid fumes may be formed in a fire.	
First Aid	Eyes	Flush with water for at least 15 min. Seek medical attention. See Sec. 6.	
	Skin	Wash exposed skin with soap and water until gone. Remove affected clothes rinse off product and wash clothes before reuse.	
	Inhalation	If affected, remove individual to fresh air, get medical attention at once if there is any discomfort.	
	Ingestion	Dilute by giving large amounts of milk or water. Get medical attention immediately. Do not induce vomiting.	
Spills	Small / large spill	Small amounts may be flushed to drain. Comply with federal, state and local regulations on reporting spills. Keep out of waterways and storm sewers.	
Product as made has the characteristic of corrosivity, like " Unlisted Hazardous Waste D002", RQ 100#.			
Information presented herein has been compiled from sources considered to be accurate and reliable, but is not guaranteed to be so. Since conditions of use are beyond our control we make no warranties, expressed or implied. MSDS prepared by: R.N. Miller 1-800-342-3577			

**MATERIAL SAFETY DATA SHEET****SECTION 1 - PRODUCT SOURCE AND IDENTITY**

Supplier identity and address	Product description:	Date: Jan. 18, 2003
Technical Marketing Alliance	Name: Premium Heavy Duty Green Pot & Pan Detergent	
2335 Buttermilk Crossing	Purpose: Helps remove heavy grease & soot.	
Crescent Springs, KY 41017	Proprietary Formula	Code: TM108515
Emergency phone: NA	Product information:	859-727-7854

**SECTION 2 - SHIPPING CLASSIFICATION**

Proper Shipping Name, Hazard Class, UN/NA Number Packing Group, Emergency Response Guide Number
Not regulated
Labels required per 49 CFR 172.101: None
Size for "Limited quantity" per 49 CFR 173.150-4: Not applicable
Reportable Quantity ("RQ") per 49 CFR 172.101: None or not possible in one non-bulk package

**SECTION 3 - SAFETY RATINGS AND HAZARDOUS INGREDIENT INFORMATION**

Reporting required by Title III Sec 313, 40 CFR 372, 29 CFR 1910.1200					Exposure Limit Values	
CAS#	313	Material or Component	%	RQ#	TWA	STEL
25155-30-0	No	Sodium dodecyl benzene sulfonate	< 20	1000	Not established	

No component is listed in "THRESHOLD LIMIT VALUES AND BIOLOGICAL EXPOSURE INDICES FOR 2002" from ACGIH except as noted above. Components listed in TITLE III SEC 313 (EPCRA) are indicated by "Yes" above.

California criteria: Constituents qualifying as hazardous materials, substances or waste, other than above, if any, have been neutralized or denatured to a non hazardous condition. Regulations referenced: California Health & Safety Code Ch 6.95 Sec 25501(k) & (l), CCR Title 22, Sec 66261.21- 24, and Appendix X of 22 CCR Chapter 11, Article 4.

Emergency overview: Neutral cleaner

Use standard industrial good practices.

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8,
Immediate	Yes	No	No	No	OSHA 29 CFR 1910.1200 and
Delayed	No	XXX	XXX	XXX	SARA 302/311/312/313.

HMIS Hazard ratings: Health 1 Fire 0 Instability 0 Other B (Glasses, gloves)

NFPA 704 Hazard Ratings: Health 1 Flammability 0 Reactivity 0 Special NA

Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4

Threshold limit value: Not established on product.

TOSCA Status: All ingredients listed

CERCLA RQ: See Sec 2.

California Prop. 65: None

Ingredients on cancer lists: None

Reproductive implications: None

**SECTION 4 - PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Viscous, clear, green liquid	Flash point deg. F (cc):	None
Odor:	Floral	Initial boiling point deg. C:	ND
Specific gravity:	>1	Vapor pressure 20 deg C:	ND
pH reaction:	Neutral	Freezing point deg. C:	ND
% phosphorous:	None	Solubility in water:	100%
VOC Content:	None		
California Rule 102 (66):	Contains no photo chemically active materials.		

SECTION 5 - SAFE HANDLING AND STORAGE		
General	Neutral cleaner. Use standard industrial good practices.	
Protective equipment		
Eyes	Safety glasses or goggles should be worn if there is possibility of eye contact.	
Skin	Impermeable gloves such as rubber, PVC or neoprene are recommended.	
Respiratory protection	None normally required. If risk of inhalation occurs, select and use equipment according to OSHA/NIOSH guidelines for nuisance mists.	
Ventilation	A well ventilated work environment is recommended.	
Other	None	
SECTION 6 - HEALTH SAFETY DATA		
Effects of acute or chronic over exposure		
Eyes	Irritating to eyes. No chronic effects known.	
Skin	Can cause irritation from repeated exposure.	
Inhalation	Mists may be irritating to breathing passages.	
Ingestion	Not a likely source of chronic exposure	
SECTION 7 - PHYSICAL STABILITY AND REACTIVITY DATA		
Explosive limits		Flash point: See Sec 4
Upper None	Lower None	Conditions to avoid: None known
Chemical stability	Stable	Hazardous decomposition products: None known
Hazardous polymerization	Cannot occur	Incompatibility: None known
SECTION 8 - EMERGENCY RESPONSE PROCEDURES		
Fire	Extinguishing media	Use equipment appropriate to the main cause of the fire.
	Special procedures	None
	Unusual hazards	None
First Aid	Eyes	Flush with water for at least 15 min. Seek medical attention. See Sec. 6.
	Skin	Wash exposed skin with soap and water until gone. Remove affected clothes rinse off product and wash clothes before reuse.
	Inhalation	If affected, remove individual to fresh air, get medical attention at once if there is any discomfort.
	Ingestion	Dilute by giving large amounts of milk or water. Get medical attention immediately. Do not induce vomiting.
Spills	Small / large spill	Small amounts may be flushed to drain. Comply with federal, state and local regulations on reporting spills. Keep out of waterways and storm sewers.
Product as made does not qualify as an "Unlisted Hazardous Waste" for disposal situations.		
Information presented herein has been compiled from sources considered to be accurate and reliable, but is not guaranteed to be so. Since conditions of use are beyond our control we make no warranties, expressed or implied.		
MSDS prepared by: R.N. Miller 1-800-342-3577		



- Effective neutralization of residual alkalinity
- Non-phosphated
- Prevents yellowing of fabric
- Use on all types of fabric

- Use in all commercial stainless steel washing machines
- Designed to be dispensed directly into the laundry machine by a Diversey dispenser
- Dispensed at various rates depending on water conditions and equipment

**Designed for**

- Health Care
- Lodging



For additional information, please contact us at +1 800 558 2332 or at [www.diversey.com](http://www.diversey.com)

## Use Overview

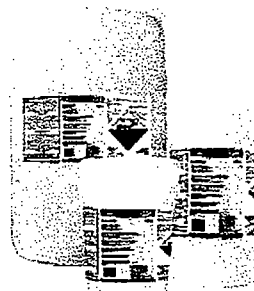
**CLAX® Launch® 6GL2 Liquid Laundry Sour** is a specifically formulated for use in commercial and on-premise laundries. This product should be applied in the last rinse to neutralize residual alkalinity. For use on all types of fabric. CFIA approved.

### Commercial Machines

- ▶ Dispense automatically with Diversey dispenser.

### Food Plant Use

- ▶ Thoroughly rinse all laundered fabrics used in food plants with potable water before re-use.
- ▶ Avoid contamination of food during use or storage.



### Product Specifications

Description	
<b>Color/Form</b>	Colorless liquid
<b>Flash Point</b>	>200° F (> 93.3° C)
<b>pH</b>	2.0
<b>Scent</b>	No fragrance added
<b>Shelf Life</b>	2 years
<b>Solubility</b>	Complete
<b>Specific Gravity</b>	1.1

### Hazard Rating

HMIS		NFPA
3	Health	3
0	Flammability	0
0	Reactivity	0

4=Very High; 3=High; 2=Moderate; 1=Slight; 0=Insignificant.

### Specific Applications

Description	Recommended
<b>Commercial Washers</b>	Yes
<b>Homestyle Washers</b>	No
<b>Tunnel Washers</b>	Yes
<b>Use with Ozone</b>	Yes
<b>Low Temperature Wash</b>	Yes
<b>Safe on Microfibers</b>	No

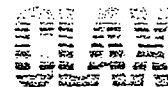
### Available Items

Product Code	Description/Package Size	Dilution
5150690	1 x 5 gal. / 18.9 L Container	Auto Dosed – 1–3 fl. oz. (30–90 mL) / 100 lbs.
5150702	1 x 15 gal. / 56.8 L Pail	Auto Dosed – 1–3 fl. oz. (30–90 mL) / 100 lbs.
5150711	1 x 55 gal. / 208 L Drum	Auto Dosed – 1–3 fl. oz. (30–90 mL) / 100 lbs.

### Safety Reminder

Please make sure your employees read and understand the product label and Material Safety Data Sheet before using this product. The label contains directions for use, and both the label and MSDS contain hazard warnings, precautionary statements and first aid procedures. MSDS are available on-line at [www.diversey.com](http://www.diversey.com) or by calling 888 352 2249.

# MATERIAL SAFETY DATA SHEET



## Launch

HMIS		NFPA	Personal protective equipment	
Health	3	3		
Fire Hazard	0	0		
Reactivity	0	0		

Version Number: 4

Preparation date: 2010-10-28

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Launch

**MSDS #:** F-00575001

**Product Code:** 5150690, 5150702, 5150711, 5150729

**Recommended use:** Laundry care.

**Manufacturer, importer, supplier:**  
 US Headquarters  
 Diversey, Inc.  
 8310 16th St.  
 Sturtevant, Wisconsin 53177-1964  
 Phone: 1-888-352-2249  
 MSDS Internet Address: [www.diversey.com](http://www.diversey.com)  
**Emergency telephone number:** 1-800-851-7145 (U.S.); 1-651-917-6133 (Int'l)

Canadian Headquarters  
 Diversey, Inc. - Canada, Inc.  
 2401 Bristol Circle  
 Oakville, Ontario L6H 6P1  
 Phone: 1-800-668-3131

### 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**DANGER. CORROSIVE. CAUSES SEVERE EYE, SKIN AND DIGESTIVE TRACT BURNS.** Burns may not be immediately obvious or painful. **HARMFUL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN.** FIRST AID: Responders should put on appropriate personal protective equipment (goggles & gloves) to protect themselves before assisting victims. Can cause hypocalcemia resulting in possibly fatal, delayed ventricular fibrillation.

#### Principal routes of exposure:

##### Eye contact:

##### Skin contact:

##### Inhalation:

##### Ingestion:

Eye contact. Inhalation. Ingestion. Skin contact.

Corrosive. Causes permanent eye damage, including blindness.

Corrosive. May cause permanent damage. Burns or irritation resulting from skin contact may be delayed and not immediately apparent. Harmful if absorbed through skin.

May cause irritation and corrosive effects to nose, throat and respiratory tract. Harmful if inhaled.

Contains fluoride compounds. Ingestion of large amounts may cause fluoride toxicity. Can cause hypocalcemia resulting in possibly fatal, delayed ventricular fibrillation. If ingested, fluoride containing compounds may disrupt the body's electrolyte balance by binding essential metal ions such as magnesium and calcium (hypocalcemia) which may disrupt normal heart and nervous system functions. Disruptions to the body's potassium balance (hyperkalemia) may also occur. Effects may appear immediately or be delayed as much as 4 hours after exposure. Death usually results from uncontrollable ventricular fibrillation. Intravenous calcium chloride or gluconate may be indicated to prevent hypocalcemia. Consultation with a medical toxicologist is advised.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	CAS #	Weight %	LD50 Oral - Rat (mg/kg)	LD50 Dermal - Rabbit	LC50 Inhalation - Rat
Fluorosilicic acid	16961-83-4	10 - 20%	125	Not available	1.11 mg/L (1 h)

### 4. FIRST AID MEASURES

#### Eye contact:

Immediately flush eyes for 15 minutes with flowing water. Take the victim to a hospital as soon as possible. If possible, apply ice water compresses during transport.

<b>Skin contact:</b>	Responders should put on appropriate personal protective equipment to protect themselves before assisting victims. Immediately remove all contaminated clothing. Immediately flush the affected area for five minutes with large amounts of water. While the victim is being rinsed with water, have someone call to arrange medical treatment. If the exposure is to the eyes face, groin, or covers a large area, call 911. For smaller exposure (i.e. A few drops on the skin), call a physician or poison control center. Immediately after flushing with water start massaging 2.5% calcium gluconate gel into the burn site. Responders must wear gloves when applying the gel to prevent secondary HF burns to their hands. Apply the gel every 15 minutes and massage until pain/redness ceases or professional medical care is available.
<b>Inhalation:</b>	Immediately move the victim to fresh air. Call 911. Inhalation of HF fumes may cause swelling in the respiratory tract up to 24 hours after exposure. Persons who have inhaled HF fumes may need prophylactic oxygen treatment and should be seen by a physician as soon as possible.
<b>Ingestion:</b>	If swallowed, give a cupful of water or milk. THEN IMMEDIATELY CONTACT A PHYSICIAN OR POISON CENTER. DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
<b>Notes to physician:</b>	Treat symptomatically.
<b>Aggravated Medical Conditions:</b>	Persons with pre-existing skin disorders may be more susceptible to irritating effects

## 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media:</b>	The product is not flammable. Use dry chemical, CO2, water spray or "alcohol" foam.
<b>Specific hazards:</b>	Thermal decomposition can lead to release of irritating gases and vapors.
<b>Unusual hazards:</b>	Corrosive material (See sections 8 and 10).
<b>Specific methods:</b>	No special methods required.
<b>Autoignition temperature:</b>	No information available.

**Special protective equipment for firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

**Extinguishing media which must not be used for safety reasons:** No information available

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Put on appropriate personal protective equipment (see Section 8.).
<b>Environmental precautions and clean-up methods:</b>	Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Sweep up and shovel into suitable containers for disposal. Use a water rinse for final clean-up.

## 7. HANDLING AND STORAGE

**Handling:**  
Avoid contact with skin, eyes and clothing. Do not taste or swallow. Avoid breathing vapors or mists. Use only with adequate ventilation. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling. Product residue may remain on/in empty containers. All precautions for handling the product must be used in handling the empty container and residue. Mix only with water. DO NOT MIX WITH BLEACH OR ANY OTHER PRODUCT OR CHEMICAL. Can react to release chlorine gas. FOR COMMERCIAL AND INDUSTRIAL USE ONLY. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.

**Storage:**  
Protect from freezing. Keep tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:**  
Respiratory protection is not required if good ventilation is maintained.

<b>Personal Protective Equipment</b>	
<b>Eye protection:</b>	Chemical-splash goggles.
<b>Hand protection:</b>	Chemical-resistant gloves Includes rubber gloves
<b>Skin and body protection:</b>	Chemical resistant apron. Protective footwear.
<b>Respiratory protection:</b>	In case of insufficient ventilation wear suitable respiratory equipment. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
<b>Hygiene measures:</b>	Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Avoid contact with skin, eyes and clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Liquid  
**Appearance:** Aqueous solution  
**Specific gravity:** 1.1  
**Vapor density:** No information available  
**Boiling point/range:** Not determined  
**Decomposition temperature:** Not determined  
**Solubility:** Completely Soluble  
**Solubility in other solvents:** No information available  
**Partition coefficient (n-octanol/water):** No information available  
**Elemental Phosphorus:** 0 % by wt.  
**pH:** 2.0  
**Explosion limits:** - upper: Not determined - lower: Not determined

**Bulk density:** No information available  
**Evaporation Rate:** No information available  
**Color:** Clear Colorless  
**Odor:** No Odor/Odorless  
**Melting point/range:** Not determined  
**Autoignition temperature:** No information available  
**Density:** 9.17 lbs/gal 1.1 Kg/L  
**Flash point:** > 200 °F > 93.4 °C  
**Viscosity:** No information available  
**VOC:** 0 % \*  
**Dilution pH:** 2.4 @ 1:100

\* - Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 8.5, Article 2, Consumer Products, Sections 94508

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable
<b>Polymerization:</b>	Hazardous polymerization does not occur.
<b>Hazardous decomposition products:</b>	Hydrogen fluoride .
<b>Materials to avoid:</b>	Ammonia. Strong oxidising agents. Do not mix with chlorinated products.
<b>Conditions to avoid:</b>	No special storage conditions required.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:** Corrosive. Oral LD50 estimated to be between 500 - 2000 mg/kg. Dermal LD50 estimated to be > 2000 mg/kg

**Component Information:** See Section 3

**Chronic toxicity:** Repeated exposure to low levels of fluoride through ingestion, inhalation, [or dermal absorption- if posing a skin absorption hazard] can cause fluorosis. The primary target is the skeletal system. Effects can include osteoporosis, increased bone density, mottled tooth enamel, and calcification of ligaments

### Specific effects

<b>Carcinogenic effects:</b>	No information available
<b>Mutagenic effects:</b>	None known
<b>Reproductive toxicity:</b>	None known
<b>Target organ effects:</b>	Hydrofluoric Acid (HF) readily penetrates skin, allowing it to destroy soft tissues and decalcify bone.

Acute effects of exposure to concentrated (>5%) HF include severe pain, respiratory irritation, severe eye damage, and pulmonary edema. Exposure to less concentrated solutions may have equally serious but delayed effects. Even though HF is chemically defined as a "weak" acid it has a considerable ability to cause severe tissue damage and death. A splash of HF to more than 25% of the body can be fatal and requires immediate medical attention. Death has been reported from contact with strong HF solutions (>50%) to as little as 10% of the body's surface area. HF spills contacting the eyes, face, groin and large surface areas of the body require immediate medical attention.

## 12. ECOLOGICAL INFORMATION

**Environmental Information:** No data available.

## 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:**  
Undiluted product is regulated under environmental and transportation laws as a corrosive waste. Dispose of in compliance with all Federal, state, provincial, and local laws and regulations.  
**RCRA Hazard Class:** D002

#### 14. TRANSPORT INFORMATION

**DOT/TDG/IMDG:** Please refer to the Diversey HazMat Library, <http://naextranet.diversey.com/dot/>, for up to date shipping information.

**DOT Bill of Lading Description:** UN3264, CORROSIVE, LIQUID, ACIDIC, INORGANIC, N.O.S. (FLUOROSILICIC ACID), 8, III

**IMDG Bill of Lading Description:** Same as DOT above.

#### 15. REGULATORY INFORMATION

##### International Inventories at CAS# Level

All components of this product are listed on the following inventories: Canada (DSL/NDSL), U.S.A. (TSCA).

##### U.S. Regulations

**California Proposition 65:** This product is not subject to the reporting requirements under California's Proposition 65

##### RIGHT TO KNOW (RTK)

Ingredient(s)	CAS #	MARTK:	NJRTK:	PARTK:	RIRTK:
Water	7732-18-5	-	-	-	-
Fluorosilicic acid	16961-83-4	X	X	-	-

##### CERCLA/ SARA

None

##### SARA 311/312 Hazard Categories

Immediate: X  
Delayed: X  
Fire: -  
Reactivity: -  
Sudden Release of Pressure: -

##### Canada

**WHMIS hazard class:** D1B Toxic materials , E Corrosive material .



#### 16. OTHER INFORMATION

**Reason for revision:** Not applicable  
**Prepared by:** NAPRAC  
**Additional advice:** None

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